PATENT **MS180586.01/MSFTP298US**

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Date: March 4, 2008 /Rebecca Stanford/
Rebecca Stanford

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:			
Applicant(s):	Anders Hejlsberg, *et al.*	Examiner:	Chrystine Pham
Serial No:	09/894,331	Art Unit:	2192
Filing Date:	June 28, 2001		

Title: OBJECT-ORIENTED PULL MODEL XML PARSER

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Appellants' representative submits this brief in connection with an appeal of the above-identified patent application. A credit card payment form is filed concurrently herewith in connection with all fees due regarding this appeal brief. In the event any additional fees may be due and/or are not covered by the credit card, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1063 [MSFTP298US].

I. Real Party in Interest (37 C.F.R. §41.37(c)(1)(i))

The real party in interest in the present appeal is Microsoft Corporation, the assignee of the present application.

II. Related Appeals and Interferences (37 C.F.R. §41.37(c)(1)(ii))

Appellants, appellants' legal representative, and/or the assignee of the present application are not aware of any appeals or interferences which may be related to, will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims (37 C.F.R. §41.37(c)(1)(iii))

Claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 are currently pending in the subject application and are presently under consideration. Claims 6-7, 9, 13-15, 21, 25, and 28-43 were cancelled without prejudice or disclaimer during prior prosecution. Claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 stand rejected by the Examiner. The rejection of claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 is being appealed.

IV. Status of Amendments (37 C.F.R. §41.37(c)(1)(iv))

No amendments have been made or entered subsequent to the Final Office Action dated July 6, 2007.

V. Summary of Claimed Subject Matter (37 C.F.R. §41.37(c)(1)(v))

Independent Claim 1

Independent claim 1 recites a computer system for parsing XML. The system comprises a scanner that parses an XML stream to locate at least one XML token associated with an XML item, the XML stream includes information from at least two data stores. (*See e.g.*, page 10, lines 4-15 and Figure 2, elements 230, 240, and $250_{A1}...250_{AN}$). The system also includes a reader that selectively pulls the XML item from the XML stream. (*See e.g.*, page 10, lines 4-15 and Figure 2, elements 222 and 240). The system further includes a retriever that retrieves information associated with

the pulled XML item and exposes data model and/or Infoset information associated with the pulled XML item. (*See e.g.*, page 12, line 18-page 13, line3 and Fig. 2, element 224; and *see generally*, page 9, line 17-page 18, line 4, page 24, lines 14-28 and Figures 1-2, 6-7, and 9).

Independent Claim 16

Independent claim 16 recites a computer implemented method for parsing XML, the method comprising: instantiating a pull model parser (*see e.g.*, page 21, lines 28-29), establishing a state associated with the pull model parser (*see e.g.*, page 21, line 30-page 22, line 5), accepting a parse request, (*see e.g.*, page 22, lines 6-12), selectively pulling an XML item from an XML stream comprising data from at least two data stores based, at least in part, on the parse request (*see e.g.*, page 22, lines 13-23), exposing data model and/or Infoset information associated with the pulled XML item (*see e.g.*, page 12, line 19) and updating the state based on the selectively pulled XML item (*see e.g.*, page 23. lines 5-26). (*See generally*, page 21, line 24-page 23, line 26, and Figures 6-7).

Independent Claim 27

Independent claim 27 recites a computer readable medium having a tangible component that stores computer executable instructions for a method for parsing XML, the method comprises operably connecting a pull model parser and a state machine (*see e.g.*, page 21, line 24-page 22, line 5), establishing an initial state in the state machine (*see e.g.*, page 21, line 30), accepting a parse request (*see e.g.*, page 22, line 6), selectively pulling a first XML item identified in the parse request from a first data store (*see e.g.*, page 22, line 13-page 23, line 4), based at least in part on the first XML item, selectively pulling a second XML item from a second data store (*see e.g.*, page 23, lines 13-23), exposing Infoset and/or data model information associated with the pulled first and second XML items (*see e.g.*, page 12, line 19-page 13, line 3), maintaining the state machine in response to one or more events associated with parsing and/or pulling the pulled first and second XLM items (*see e.g.*, page 23, lines 5-26), checking the pulled first and second XML items to determine whether they are well-formed (*see e.g.*, page 23, line 27-page 24, line 13), and checking the pulled first and second XML items to

determine whether they are valid (*see e.g.*, page 23, line 27-page 24, line 13). (*See generally*, page 21, line 24-page 24, line 28, and Figures 6-9).

VI. Grounds of Rejection to be Reviewed (37 C.F.R. §41.37(c)(1)(vi))

A. Claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 stand rejected under 35 U.S.C. as being unpatentable over Call (US 2002/0143521 A1) in view of Houben *et al.* (US 2002/0147745).

VII. Argument (37 C.F.R. §41.37(c)(1)(vii))

A. Rejection of Claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 Under 35 U.S.C. §103(a)

Claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Call (US 2002/0143521 A1) in view of Houben *et al.* (US 2002/0147745). Reversal of this rejection is requested for at least the following reason. Call and Houben *et al.*, alone or in combination, do not teach or suggest all features set forth in the subject claims.

Appellants' claimed subject matter relates to parsing XML, and particularly to an object oriented pull model XML parser. More particularly, the subject matter as claimed provides a configurable, object oriented pull model XML parser that exposes an interface that facilitates abstracting input sources. The object oriented pull model parser facilitates incrementally and selectively parsing data from an XML document thereby mitigating over-parsing problems associated with conventional systems (e.g., excessive memory and/or processing requirements). Because the pull model parser is object oriented and exposes an interface, the subject matter as claimed simplifies interactions with other programs, processes, objects, and the like, that in turn facilitates providing high-level abstractions of XML data sources. Moreover, since XML can contain external entity references, the claimed subject matter can selectively expand such external references, thus providing flexibility advantages concerning document location and entity expansion over conventional systems. Further, since an XML document can contain invalid and/or

ill formed XML, the claimed subject matter can determine whether the pulled XML is well formed and/or valid, where well-formedness comports with, for example, World Wide Web Consortium (W3C) standards, and validity concerns adherence to one or more user defined formats, such as, for example, Document Type Declarations (DTDs) and/or schema. Additionally, the parser associated with the claimed subject matter facilitates parsing data as a virtual node is moved over a stream of XML data. Pulling nodes from an input stream in such a manner provides advantages over conventional systems in that if a user does not wish to parse certain nodes in an input stream, the virtual node can overlook or pass over these undesired nodes without presenting them for parsing. Such a facility reduces the amount of data that the parser and/or a user program needs to interact with and simplifies conventional processes like stopping parsing when a certain point in the input stream is reached. To this end, independent claims 1, 16, and 27 recite similar features, namely: *a scanner that parses an XML stream to locate at least one XML token associated with an XML item,* ***the XML stream includes information from at least two data stores***. Call and Houben *et al.* alone or in combination, fail to teach or suggest these aspects of appellants' claimed subject matter.

Call relates to electronic data processing systems and more particularly, to methods and apparatus for storing and transmitting both variable length data (including text) and fixed length data, and for performing processing operations on such data. While the cited document provides mechanisms for storing and manipulating XML documents and provides for an API for processing documents in accordance with an interface specification for the Document Object Model (DOM) as defined by the World Wide Web Consortium (W3C), or by means of a SAX API, the cited document does not provide that the XML stream from which an XML item is to be extracted comprise information from at least two data sources. The Examiner in the Responds to Arguments section of the Final Office Action dated July 6, 2007 contends that Call discloses these pertinent aspects at paragraphs [0023], [0031], [0033]-[0034], [0038], and [0044]. Appellants' representative respectfully disagrees with this assertion. Paragraph [0023] provides: "data stored in the integer array is subdivided into items, and items are subdivided into fields. Items may be organized into more complex data structures, such as relational tables, hierarchical object structures, linked lists and trees, and the like, using special

fields called links." Paragraph [0031] states: "each item's physical storage location is placed in a lookup table indexed by itemnumber, allowing any item to be indirectly addressed by is itemnumber, and allowing itemnumber links to be rapidly dereferenced to obtain the location of linked items." Paragraphs [0033]-[0034] discloses: "the metadata describing each itemtype consists of: (1) an optional name (which may be a qualified name in a namespace). The item name may be supplied by the user, or derived automatically from an XML schema or XML document. Two items whose type is identical in all other respects but which have different names are treated as different item types and are assigned different itemtypenumbers. Item names need not be unique if associated with differing type information." Paragraph [0038] provides: "each item is composed of a predetermined set of one or more numbered fields (some of which may be empty), with the data in each field being located at (or via) predetermined integer positions within the item as specified by the itemtype's field map. Thus, while the position of items with respect to other items has no logical significance, the position of every field within an item is specified by the field map in the item type." Further, paragraph [0044] provides: "(1) Field name (if any), which may be a qualified name in a namespace. The field name may be supplied by the user, or by an XML schema or XML data when a named element or attribute is stored as a field." Review of the cited passages makes evident that Call organizes items in complex data structures (e.g., relational tables, hierarchical object structures, linked lists, trees, and the like) utilizing fields within the data structure as links. Further, each item's physical storage location can be placed in a lookup table indexed by item number which allows items to be indirectly addressed by item number allowing links to be rapidly dereferenced to obtain the location of linked items. Nevertheless, contrary to the Examiner's assertions, Call does not provide that the XML stream from which an XML item is to be extracted comprises information from at least two data sources. Nowhere in Call is there contemplation, let alone articulation of, a data stream that is drawn from at least two data stores. Appellants' claimed subject matter in contrast provides and discloses parsing an XML stream that comprises information from two or more data stores to locate XML tokens associated with an XML item. It is submitted that the primary document is clearly silent with respect to the salient features recited in the subject claims, thus deficient and distinguishable from the claimed

subject matter in this regard.

Moreover, Call's silence provides compelling indication that the Examiner is impermissibly employing appellants' own teaching to cure and/or remedy omissions/deficiencies in the cited document. The Examiner is thus insidiously utilizing appellants' specification as a 20/20 hindsight-based road map to achieve the purported invention. In essence, the Examiner has based the rejection solely on an assertion that it would have been obvious to do something not suggested in the art based on the advantages disclosed in appellants' specification. This rationale has been condemned by the Court of Appeal for the Federal Circuit as being sophistic. *See e.g.*, *Panduit Corp. v. Dennison Manufacturing Co.*, 1 USPQ2d 1593 (Fed. Cir. 1987). Additionally, as the Examiner clearly acknowledges and concedes, Call fails to disclose: *a retriever that …* ***exposes data model and/or Infoset information associated with the pulled XML item***. In order to remedy this deficiency the Examiner offers Houben *et al*.

Houben *et al*. relates generally to document servers and more specifically to document servers integrated with legacy data systems. Nevertheless, like the primary document, the secondary document does not teach or suggest a scanner that parses an XML stream to locate at least one XML token associated with an XML item such that the XML stream includes information from at least two data stores. Rather, the secondary document, like the primary document above, is silent regarding the pertinent aspects of appellants' claimed subject matter. Accordingly, since neither Call nor Houben *et al*. make obvious the appellants claimed subject matter, reversal of this rejection with respect to independent claims 1, 16, and 27 (and associated dependent claims) is respectfully requested.

B. Conclusion

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of claims 1-5, 8, 10-12, 16-20, 22-24, and 26-27 be reversed.

If any additional fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP298US].

Respectfully submitted,
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VIII. Claims Appendix (37 C.F.R. §41.37(c)(1)(viii))

1. A computer system for parsing XML, the system comprising:

a scanner that parses an XML stream to locate at least one XML token associated with an XML item, the XML stream includes information from at least two data stores;

a reader that selectively pulls the XML item from the XML stream; and

a retriever that retrieves information associated with the pulled XML item and exposes data model and/or Infoset information associated with the pulled XML item.

2. The system of claim 1, the XML item is one of a start token, an end token, markup, content, an entity reference, an external reference, an element, a tag, character data, an attribute, a CDATA section, a comment and a processing instruction.

3. The system of claim 1, further comprising a checker that determines whether the pulled XML item is well-formed.

4. The system of claim 1, further comprising a validator that determines whether the pulled XML item is valid.

5. The system of claim 1, the scanner:

facilitates navigating a virtual node in a stream of XML nodes; and

resolves an external reference in the XML stream.

6-7. (Cancelled).

8. The system of claim 1, the reader selectively pulls an XML node from the stream of XML nodes based, at least in part, on data provided to the reader by a parse requestor.

9. (Cancelled).

10. The system of claim 3, the checker determines whether the pulled XML item is well-formed based, at least in part, on comparing the pulled XML item to one or more syntax documents.

11. The system of claim 4, the validator determines whether the pulled XML item is valid based, at least in part, on comparing the XML item to one or more DTD, schema, and external data representation documents.

12. The system of claim 1, at least one of the scanner, the reader and the retriever is an object.

13-15. (Cancelled).

16. A computer implemented method for parsing XML, the method comprising:

instantiating a pull model parser;

establishing a state associated with the pull model parser;

accepting a parse request;

selectively pulling an XML item from an XML stream comprising data from at least two data stores based, at least in part, on the parse request;

exposing data model and/or Infoset information associated with the pulled XML item; and

updating the state based on the selectively pulled XML item.

17. The method of claim 16 further comprising checking the pulled XML item to determine whether it is well-formed.

18. The method of claim 17 where determining whether the pulled XML item is well-formed comprises comparing the pulled XML item to one or more syntax documents.

19. The method of claim 16 further comprising checking the pulled XML item to determine whether it is valid.

20. The method of claim 19 where determining whether the pulled XML item is valid comprises comparing the pulled XML item to at least one of a DTD, a schema and an external data representation.

21. (Cancelled).

22. The method of claim 16 where instantiating the pull model parser comprises:

associating a stream with the pull model parser; and

initializing a scanner adapted to facilitate navigating within the stream.

23. The method of claim 16 where establishing the state associated with the pull model parser comprises:

associating a state machine with the pull model parser; and

establishing an initial state position within the state machine.

24. The method of claim 16 where selectively pulling an XML item further comprises:

positioning a virtual node over an XML node within a stream of input XML nodes; and

selectively extracting an XML item from the XML node over which the virtual node is positioned; and

resolving an external reference in the XML item.

25. (Cancelled).

26. The method of claim 16 where updating the state based on the selectively pulled XML item comprises repositioning the state position within a state machine.

27. A computer readable medium having a tangible_component that stores computer executable instructions for a method for parsing XML, the method comprising:

operably connecting a pull model parser and a state machine;

establishing an initial state in the state machine;

accepting a parse request;

selectively pulling a first XML item identified in the parse request from a first data store;

based at least in part on the first XML item, selectively pulling a second XML item from a second data store;

exposing Infoset and/or data model information associated with the pulled first and second XML items;

maintaining the state machine in response to one or more events associated with parsing and/or pulling the pulled first and second XLM items;

checking the pulled first and second XML items to determine whether they are well-formed; and

checking the pulled first and second XML items to determine whether they are valid.

28-43 (Cancelled).

IX. Evidence Appendix (37 C.F.R. §41.37(c)(1)(ix))

None.

X. Related Proceedings Appendix (37 C.F.R. §41.37(c)(1)(x))

None.